Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **L 218**

of **KEMA B.V.**
Metering, Protection & Substation Automation Laboratory

This annex is valid from: **28-06-2023** to **01-04-2026** Replaces annex dated: **01-02-2023**

Location(s) where activities are performed under accreditation

Head Office

Klingelbeekseweg 195
6812 DE
Arnhem
The Netherlands

Location	Abbreviation/ location code
Klingelbeekseweg 195 6812 DE Arnhem The Netherlands	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
1.	Protection relays & substation automation equipment	Functional requirements	EN-IEC 60255-1 IEC 60255-12 IEC 60255-13 EN-IEC 60255-121 EN-IEC 60255-127 EN-IEC 60255-149 EN-IEC 60255-151 IEEE C37.112	ARN
		Energizing quantities (Burden test)	EN-IEC 60255-1	
		Dimensions of structure	EN-IEC 60255-1 EN-IEC 60297-3-101	

This annex has been approved by the Board of the Dutch Accreditation Council, on its behalf,

J.A.W.M. de Haas

[1] If there is a referral to a code starting with NAW, NAP, EA or IAF, this concerns a scheme mentioned on the RvA-BR010-lijst.
If no date or version number is mentioned for a normative document, the accreditation concerns the most current version of the document or scheme.

No.	Material or product	Type of activity[1]	Internal reference number	Location
2.	Electrical energy meters	**Tests of Accuracy requirements** • Limits of error due to variation of the current • Repeatability test • Measurement of meter Initial start-up time • Test of meter constant • Test of Starting current / condition • Test of No-load condition • Tests of pulse outputs & pulse inputs • Tests of Influence quantities	EN 50470-1/2/3 EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24	ARN
3.	Electrical energy meters	**Tests of electrical requirements** • Test of power consumption • Test of influence of supply voltage • Test of short-time overcurrents • Test of self-heating	EN 50470-1/2/3 [1)] EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 EN-IEC 62052-31	ARN
4.	Electrical energy meters	Durability - Testing of the stability of metrological characteristics by applying elevated temperature	EN-IEC 62059-32-1	ARN
5.	Electrical energy meters	**Tests of functional performance** • Core functional test within voltage and temperature range limits • Functional tests within the limit range of operation. • Interruption to token acceptance • Rejection of duplicate tokens • Rejection of valid tokens when available credit is saturated • Energy register roll-over	EN-IEC 62055-31	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
6.	Electrical energy meters	**Tests of timekeeping accuracy** • Test of synchronous clock on a.c. supply • Test of synchronous clock on operation reserve • Test of crystal-controlled clocks on a.c. supplies • Test of crystal-controlled clocks on operation reserve • Test of accuracy of crystal-controlled clocks with temperature. • Test of influence of harmonics • Test of synchronization • Test of switching accuracy	EN-IEC 62055-31 EN-IEC 62054-21	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
		Supply control and load control switch testing		
7.	Electrical energy meters	Normal operation test	EN-IEC 62055-31	ARN
8.		Pre-conditioning test	EN-IEC 62052-31	ARN
9.		Electrical endurance test	EN-IEC 62055-31 EN-IEC 62052-31	ARN
10.		Fault current making capacity test	EN-IEC 62055-31	ARN
11.		Verification of the ability to make the rated short-circuit current	EN-IEC 62052-31	ARN
12.		Short-circuit current carrying capacity test	EN-IEC 62055-31	ARN
13.		Verification of the ability to carry the rated operational and stay safe short-time withstand current	EN-IEC 62052-31	ARN
14.		Minimum switched current test	EN-IEC 62055-31 EN-IEC 62052-31	ARN
		Climatic environmental tests		
15.	Electrical energy meters and Protection relays & substation automation equipment	Cold operational test Cold storage test -40°C to +5°C	EN-IEC 60255-1 EN-IEC 62052-11 EN 50470-1 EN-IEC 60068-2-1	ARN
16.		Dry heat operational test Dry heat storage test +5°C to +85°C	EN-IEC 60255-1 EN-IEC 62052-11 EN 50470-1 EN-IEC 60068-2-2	ARN
17.		Change of temperature test -40°C to +85°C	IEC 60255-1 EN-IEC 60068-2-14	ARN
18.		Damp heat cyclic test (12 h + 12 h) +40°C and +55°C up to 100% relative humidity	EN-IEC 60255-1 EN-IEC 62052-11 EN 50470-1 EN-IEC 60068-2-30	ARN
19.		Damp heat steady state test +30°C, +40°C and +55°C 85% or 93% relative humidity	EN-IEC 60255-1 EN-IEC 60068-2-78	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
		Electrical safety tests and measurements		
20.	Electrical energymeters and	Creepage and clearance measurements	EN-IEC 60255-27 EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31	ARN
21.	Protection relays & substation automation equipment	Mechanical • Mechanical strength of housing test (springhammer test) • Sharp edges • Provisions for lifting and carring	EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31 EN-IEC 60068-2-75	ARN
22.		Spread of fire • Abnormal operation and single faultconditions • Limited-energy circuit • Batteries	EN-IEC 60255-27 EN-IEC 62052-31	ARN
23.		Dielectric voltage test and insulation resistance measurement test	EN-IEC 60255-27	ARN
24.		Degree of protection provided by enclosures (Dust and Water tests)	EN-IEC 60255-27 EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31 EN-IEC 60529	ARN
25.		Temperature and heat tests • Test of influence of heating • Temperature tests	EN-IEC 62052-11 EN 50470-1 EN-IEC 62052-31 EN-IEC 60085	ARN
26.		Test of immunity to earth fault / long term overvoltage withstand	EN-IEC 62052-11 EN 50470-2/3 EN-IEC 62052-31	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
27.	Electrical energymeters and Protection relays & substation automation equipment	Test of Insulation properties (Dielectric tests): • impulse voltage • a.c. / d.c voltage	EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 EN 50470-1/2/3 EN-IEC 62052-31 EN-IEC 60060-1 HD 588.1 S1	ARN
28.		Protection against electrical shock • Accessible parts test • Limit values for accessible parts	EN-IEC 60255-27 EN-IEC 62052-31	ARN
29.		Impulse voltage	EN-IEC 60255-27	ARN
30.		Protective bonding resistance	EN-IEC 60255-27 EN-IEC 62052-31	ARN
31.		Durability of markings	EN-IEC 62052-31	ARN
32.		Tests on terminals • manual test • flexion and pull test	EN-IEC 62052-31	ARN
33.		Surge test • Surge test with supply voltage • Surge voltage withstand across open contacts	EN-IEC 62052-31	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
		Mechanical testing		
34.	Electrical energy meters and Protection relays & substation automation equipment	Shock test Maximale acceleratie: 11500 m/s2 Nominale tijdsduur: 1 - 65 ms Maximale (piek-piek) snelheid:13 m/s	EN-IEC 60068-2-27 EN-IEC 62052-11 EN 50470 EN-IEC 60255-21-2	ARN
35.		Vibration test Maximale acceleratie: 1120 m/s2 Maximale snelheid: 1,8 m/s Maximale verplaatsing: 60 mm Frequentiebereik: 1 – 2000 Hz	EN-IEC 60068-2-6 EN-IEC 62052-11 EN 50470-1 EN-IEC 60255-21-1 EN-IEC 60255-21-3	ARN
36.	Electrical energy meters	Token carrier acceptor test	EN-IEC 62055-31	ARN
37.		Keypad interface test	EN-IEC 62055-31	ARN
38.		Token carrier acceptor interface test	EN-IEC 62055-31	ARN

No.	Material or product	Type of activity[1]	Internal reference number	Location
EMC.I		**EMC Immunity tests**		
EMC.I.21	Electric and electronic equipment	Electrostatic discharge immunity (ESD) Contact discharge up to 30 kV Air discharge up to 30 kV	EN-IEC 60255-26 EN-IEC 62052-11 EN 50470-1 IEEE C37.90.3 EN-IEC 61000-4-2	ARN
EMC.I.22		Electrical fast transient / burst immunity (EFT) 1 and 3 phases 0,25 – 4 kV	EN-IEC 60255-26 IEC 62052-11 EN 50470-1 IEEE C37.90.1 EN-IEC 61000-4-4	ARN
EMC.I.23		Surge immunity 1 and 3 phases 0,25 – 8 kV	EN-IEC 60255-26 EN-IEC 62052-11 EN 50470-1 EN-IEC 61000-4-5	ARN
EMC.I.07		Immunity to conducted disturbances, induced by radio-frequency fields 3 V - 10 V 150 kHz – 80 MHz	EN-IEC 60255-26 EN-IEC 62052-11 EN-IEC 61000-4-6 EN 50470-1	ARN
EMC.I.24		Power frequency magnetic field immunity, 50/60 Hz 3 A/m – 1000 A/m	EN-IEC 60255-26 EN 50470-1 EN-IEC 61000-4-8	ARN
EMC.I.26		Voltage dips, short interruptions and voltage variations Immunity 1 , 2 or 3 phase 0° - 360°	EN-IEC 60255-26 EN 50470-1 EN-IEC 61000-4-11 EN-IEC 62052-11	ARN
EMC.I.08		Immunity to conducted disturbances Common mode 1 - 30 V (continuous) 10 - 300 V (short duration) 15 Hz – 150 kHz; 3 – 30 V	EN-IEC 60255-26 EN-IEC 61000-4-16	ARN

Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **L 218**

of **KEMA B.V.**
Metering, Protection & Substation Automation Laboratory

This annex is valid from: **28-06-2023** to **01-04-2026** Replaces annex dated: **01-02-2023**

No.	Material or product	Type of activity[1]	Internal reference number	Location
EMC.I.30	Electric and electronic equipment	DC voltage ripple Immunity 0 – 20% 100/120 Hz 0 –300 Vdc	EN-IEC 60255-26 EN-IEC 61000-4-17	ARN
EMC.I.38		Damped oscillatory wave 100 kHz, 1 MHz; 0,25 –2,5 kV 3 MHz, 10 MHz, 30 MHz 0,5 kV – 4,0 kV	EN-IEC 60255-26 IEEE C37.90.1 EN-IEC 61000-4-18 EN-IEC 62052-11 EN 50470-1	ARN
EMC.I.37		DC Voltage dips, short interruptions, and voltage variations immunity 20 – 300 Vdc Up to 10 A	EN-IEC 60255-26 EN-IEC 61000-4-29	ARN
EMC.I.25		Pulsed magnetic field immunity 100 – 1000 A/m	EN-IEC 61000-4-9	ARN
EMC.I.33		Damped oscillatory magnetic field immunity 10 – 100 A/m	EN-IEC 61000-4-10	ARN
EMC.I.36	Electric and electronic equipment	Ringwave immunity test 1 and 3 phases 0,25 to 2 kV Line-to-Line 0,5 to 4 kV line-to-ground	EN-IEC 61000-4-12	ARN
EMC.I.45	Electric and electronic equipment	Immunity to conducted, differential mode disturbances and signaling 2 kHz to 150 kHz at a.c. power ports 0,1 to 20 Vrms Diff. voltage testing 0,5 to 4 Arms Diff. current testing	EN-IEC 61000-4-19 NPR-CLC/TR 50579	ARN
EMC.I.14	Electric and electronic equipment	Radiated Immunity GTEM method 80 MHz to 2 GHz; 10 V/m – 30 V/m 2 GHz to 6GHz; 3 V/m - -10 V/m	EN-IEC 61000-4-20	ARN

Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **L 218**

of **KEMA B.V.**
Metering, Protection & Substation Automation Laboratory

This annex is valid from: **28-06-2023** to **01-04-2026** Replaces annex dated: **01-02-2023**

No.	Material or product	Type of activity[1]	Internal reference number	Location
EMC.E		**Electromagnetic Compatibility Emission (EMC)**		
EMC.E.34	Electric and electronic equipment	Conducted emission Voltage method (AAN) 150 kHz – 30 MHz	EN-IEC 60255-26 CISPR 32, CISPR 22 EN 55032, EN 55022 EN-IEC 62052-11 EN 50470-1	ARN
EMC.E.02		Conducted emission Voltage method (AMN) 150 kHz – 30 MHz	EN-IEC 60255-26 CISPR 32, CISPR 22 EN 55032, EN 55022 EN-IEC 62052-11 EN 50470-1	ARN

Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **L 218**

of **KEMA B.V.**
Metering, Protection & Substation Automation Laboratory

This annex is valid from: **28-06-2023** to **01-04-2026** Replaces annex dated: **01-02-2023**

Product standards containing one or more of the above mentioned test activities are listed below. Accreditation is only applicable to the tests mentioned above.

Product standards for EMC

No.	Material of product	Activity reference number	Product Standard, directive and/or approval requirements
EMC.S.03	EMC Testing Electrical Energy Meters	EMC Immunity No. EMC.I.07, EMC.I.08, EMC.I.21, EMC.I.22, EMC.I.23, EMC.I.24, EMC.I.25, EMC.I 26, EMC.I.30, EMC.I.33, EMC.I.36, EMC.I 37, EMC.I.38, EMC.I.45	EN 50470-1/2/3 EN-IEC 62052-11 EN-IEC 62053-11/21/22/23/24 Directive 2014/32/EU annex I, annex V MI-003
EMC.S.08	EMC Testing Protection relays & substation automation equipment	EMC Immunity No. EMC.I.07, EMC.I.08, EMC.I.21, EMC.I.22, EMC.I.23, EMC.I.24, EMC.I.25, EMC.I 26, EMC.I.30, EMC.I.33, EMC.I.36, EMC.I 37, EMC.I.38, EMC.I.45 EMC Emission No. EMC.E.34 t/m EMC.E.02	EN-IEC 60255-1 EN-IEC 60255-26 IEEE C37.90.1/3

Product standards containing one or more of the above mentioned test activities are listed below. Accreditation is only applicable to the tests mentioned above.

No.	Material of product	Activity reference number	Product Standard, directive and/or approval requirements
1	Protection relays & substation automation equipment	Above listed methods Nrs. 15, 16, 17, 18, 19, 20, 22, 23, 24, 29, 30, 31, 32 EMC Immunity No.EMC.I.24, EMC.I.21, EMC.I.08, EMC.I.23, EMC.I.38, EMC.I.22, EMC.I.07, EMC.I.26, EMC.I.37, EMC.I.30 EMC Emission No. EMC.E.34 t/m EMC.E.02	EN-IEC 61850-3

2		Above listed methods Nrs. 23, 29 EMC Immunity No. EMC.I.24, EMC.I.21, EMC.I.23, EMC.I.38, EMC.I.22, EMC.I.07, EMC.I.08, EMC.I.33	IEEE 1613, IEEE 1613.1
3	Electrical energy meters	Above listed methods Nrs. 2, 3, 5, 6, 7, 9, 10, 12, 14, 15, 16, 18, 20, 21, 24, 25, 26, 27, 31, 32, 33, 34, 35 EMC.I.21, EMC.I.22, EMC.I.23, EMC.I.07, EMC.I.26, EMC.E34	EN-IEC 62055-31